

Name of Work	:	Improvements to Roads and Drains of Sahakaranagar A,E,F,G Blocks and Surrounding areas in Ward No. 07 Byatarayanapura
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	HONNAPPA MURTHY
Date of Testing	:	16-04-19
Type of Mix	:	DBM
Sample I/D	:	DBM-2

GRADATION FOR DBM

(As per MORT&H 500-10,Grading-2)

Sample Location:	At plant	Date of Sampling:	16-04-19
		Date of testing:	16-04-19
Type of material & Purpose:	DBM	Oven Dry Wt.(gms):	1500.0

Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
37.50	0	0	0.00	100.00	100.00
26.50	83	83	5.53	94.47	90-100
19.00	115	198	13.20	86.80	71-95
13.20	220	418	27.87	72.13	56-80
4.750	343	761	50.73	49.27	38-54
2.360	182	943	62.87	37.13	28-42
0.300	275	1218	81.20	18.80	7-21
0.075	178	1396	93.07	6.93	2-8
Pan	104	1500			
Total	1500.0				



Consultant's Representative



Project	Improvements to Roads and Drains of Sahakaranagar A,E,F,G Blocks and Surrounding areas in Ward No. 07 Byatarayanapura		
Client	Bruhat Bengaluru Mahanagara Palike		
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore		
Contractor	HONNAPPA MURTHY		

AGGREGATE IMPACT VALUE (IS: 2386 Part - 4)

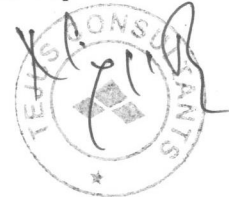
Proposed Use	BC	Date of Sampling	17-04-19
Sample Location	At plant	Date of Testing	17-04-19

Sl. No.	Description		Test No.			Spec Limit (%)
			1	2	3	
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	398.00	394.00	380.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	302.00	295.00	290.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	96.00	99.00	90.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	24.12	25.13	23.68	
5	Average Aggregate impact value	(%)	24.31			Max - 30 %

Remarks :

Satisfactory / Not Satisfactory

Consultant's Representative



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Contractor	HONNAPPA MURTHY		

AGGREGATE IMPACT VALUE (IS: 2386 Part - 4)

Proposed Use	BC	Date of Sampling	17-04-19
Sample Location	At plant	Date of Testing	17-04-19

Sl. No.	Description		Test No.			Spec Limit (%)
			1	2	3	
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	365.00	360.00	380.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	275.00	275.00	290.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	90.00	85.00	90.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	24.66	23.61	23.68	
5	Average Aggregate impact value	(%)	23.98			Max - 30 %

Remarks :

✓ Satisfactory / Not Satisfactory



Consultant's Representative



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Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	HONNAPPA MURTHY

AGGREGATE IMPACT VALUE (IS: 2386 Part - 4)

Proposed Use	BC	Date of Sampling	17-04-19
Sample Location	At plant	Date of Testing	17-04-19

Sl. No.	Description		Test No.			Spec Limit (%)
			1	2	3	
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	350.00	340.00	390.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	270.00	250.00	300.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	80.00	90.00	90.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	22.86	26.47	23.08	
5	Average Aggregate impact value	(%)	24.13			Max - 30 %

✓ Satisfactory / Not Satisfactory

Consultant's Representative



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Client	Bruhat Bengaluru Mahanagara Palike		
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore		
Contractor	HONNAPPA MURTHY		

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

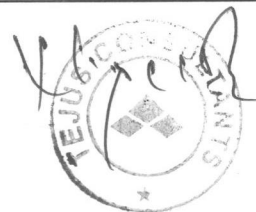
Type of Material	BC	Proposed Use	BC
Sample Location	At plant	Date of Sampling	17-04-19
		Date of Testing	17-04-19

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge (D) gms
63	50	0	0	0	0
50	40	0	0	0	0
40	31.5	0	0	0	0
31.5	25	0	0	0	0
25	20	0	0	0	0
20	16	946	113	830	78
16	12.5	1130	80	1055	122
12.5	10	682	78	605	50
10	6.3	580	66	515	51
Total		3338	337	3005	301

Note: Minimum 200 Pcs should be taken on each fraction of test

	Flakiness Index(%):	10.10	
	Elongation Index(%):	10.02	
	Combined FI+EL (%)	20.11	

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Project	Improvements to Roads and Drains of Sahakaranagar A,E,F,G Blocks and Surrounding areas in Ward No. 07 Byatarayanapura		
Client	Bruhat Bengaluru Mahanagara Palike		
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore		
Contractor	HONNAPPA MURTHY		

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	BC	Proposed Use	BC
Sample Location	At plant	Date of Sampling	17-04-19
		Date of Testing	17-04-19

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge (D) gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	958	80	945	66
16.0	12.5	1305	118	1255	122
12.5	10.0	515	70	445	55
10.0	6.3	490	60	433	68
Total		3268	328	3078	311

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.04
Elongation Index(%):	10.10
Combined FI+EL (%)	20.14

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Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	HONNAPPA MURTHY
Date of Testing	:	17-04-2019
Type of Mix	:	BC
Sample ID	:	BC1

GRADATION FOR BC
(As per MORT&H 500-18, Grading-2)

Sample Location:	At plant	Date of Sampling:	17-04-2019
		Date of testing:	17-04-2019
Type of material & Source:	BC	Oven Dry Wt.(gms):	1200.0

Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	125	120.0	10.00	90.00	79 - 100
9.50	80	198.0	16.50	83.50	71 - 95
4.75	220	418.0	34.83	65.17	53 - 71
2.360	150	568.0	47.33	52.67	42 - 58
1.180	135	703.0	58.58	41.42	34 - 48
0.600	120	825.0	68.75	31.25	26 - 38
0.300	90	915.0	76.25	23.75	18 - 28
0.150	75	990.0	82.50	17.50	12 - 20
0.075	115	1105.0	92.08	7.92	4 - 10
Pan	95.0	1200.0			
Total	1200.0				

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 Consultant's Representative

Name of Work	:	Improvements to Roads and Drains of Sahakaranagar A,E,F,G Blocks and Surrounding areas in Ward No. 07 Byatarayanapura
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	HONNAPPA MURTHY
Date of Testing	:	17-04-2019
Type of Mix	:	BC
Sample ID	:	BC2

GRADATION FOR BC
(As per MORT&H 500-18, Grading-2)

Sample Location:	At plant	Date of Sampling:	17-04-2019
		Date of testing:	17-04-2019
Type of material & Process	BC	Oven Dry Wt.(gms):	1200.0

Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19	0	0	0.00	100.00	100.00
42.5	95	90.0	7.50	92.50	79 - 100
75	120	208.0	17.33	82.67	71 - 95
150	235	440.0	36.67	63.33	53 - 71
300	180	625.0	52.08	47.92	42 - 58
600	98	723.0	60.25	39.75	34 - 48
1250	110	833.0	69.42	30.58	26 - 38
2500	85	918.0	76.50	23.50	18 - 28
5000	60	980.0	81.67	18.33	12 - 20
10000	110	1090.0	90.83	9.17	4 - 10
Fin	110.0	1200.0			
Total	1200.0				




 Consultant's Representative

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Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	HONNAPPA MURTHY
Date of Testing	:	18-04-2019
Type of Mix	:	Tack coat
Sample ID	:	1

DETERMINATION OF RATE OF SPREAD TACK COAT

Determination	Unit	Test No	
		1	2
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.825	864.000
Final weight of plate after application of tack Coat (c)	Kg	0.848	864.023
Weight of tack Coat (d=c-b)	Kg	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.256	0.256
Average	Kg/sq.m	0.256	
Specified Limit	Kg/sq.m	0.250 Kg/sq.m	



Consultant's Representative



**BITUMEN CONTENT AND GRADATION DETERMINATION OF
BITUMINOUS CONCRETE MIX**

TEJUS
CONSULTANTS

Name of Work	:	Improvements to Roads and Drains of Sahakaranagar A,E,F,G Blocks and Surrounding areas in Ward No. 07 Byatarayanapura
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	HONNAPPA MURTHY
Date of Testing	:	18-04-2019
Type of Mix	:	BC
Sample I/D	:	BC1

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	930	910
2. Weight of Mixture after extraction, g	878	859
3. Weight of Bitumen	52	51
4. Weight of filter paper before extraction, g	2.00	2.15
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	2.10	1.85
7. Weight of Bitumen & fines	54.10	52.85
8. Bitumen content in %	5.82	5.81
9. Average Bitumen content in %	5.81	
10. Minimum Bitumen content in %	5.80	

GRADATION FOR BC AFTER EXTRACTION

(As per MORT&H 500-18, Grading-2)

Sample Location:	At site		Date of Sampling:	18-04-2019	
			Date of testing:	18-04-2019	
Type of material & Purpose:	BC		Oven Dry Wt.(gms):	878.0	
Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	90	90.0	10.25	89.75	79 - 100
9.50	135	208.0	23.69	76.31	71 - 95
4.75	86	293.0	33.37	66.63	53 - 71
2.360	140	435.0	49.54	50.46	42 - 58
1.180	120	532.0	60.59	39.41	34 - 48
0.600	75	607.0	69.13	30.87	26 - 38
0.300	66	673.0	76.65	23.35	18 - 28
0.150	42	715.0	81.44	18.56	12 - 20
0.075	90	805.0	91.69	8.31	4 - 10
Pan	73.0	878.0			
Total	878.0				

Consultant's Representative



**BITUMEN CONTENT AND GRADATION DETERMINATION OF
DENSE BITUMINOUS MACADAM MIX**

Name of Work	:	Improvements to Roads and Drains of Sahakaranagar A,E,F,G Blocks and Surrounding areas in Ward No. 07 Byatarayanapura
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	HONNAPPA MURTHY
Date of Testing	:	18-04-19
Type of Mix	:	DBM
Sample I/D	:	DBM-1

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	834	947
2. Weight of Mixture after extraction, g	799	909
3. Weight of Bitumen	35	38
4. Weight of filter paper before extraction, g	2.00	2.00
5. Weight of filter paper after extraction, g	4.00	4.00
6. Weight of fines, g	2.00	2.00
7. Weight of Bitumen & fines	37.00	40.00
8. Bitumen content in %	4.44	4.22
9. Average Bitumen content in %	4.33	
10. Minimum Bitumen content in %	4.50	

GRADATION FOR DBM AFTER EXTRACTION
(As per MORT&H 500-10, Grading-2)

Sample Location:	At site	Date of Sampling:	18-04-19
		Date of testing:	18-04-19
Type of material & Purpose:	DBM	Oven Dry Wt.(gms):	800

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
37.50	0.0	0.0	0.00	100.00	100.00
26.50	36.0	36.0	4.50	95.50	90-100
19.00	120.0	156.0	19.50	80.50	71-95
13.20	103.0	259.0	32.38	67.63	56-80
4.750	155.0	414.0	51.75	48.25	38-54
2.360	91.0	505.0	63.13	36.88	28-42
0.300	140.0	645.0	80.63	19.38	7-21
0.075	113.0	758.0	94.75	5.25	2-8
Pan	42.0				
Total	800.0				

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CONSULTANTS

Name of Work	:	Improvements to Roads and Drains of Sahakaranagar A,E,F,G Blocks and Surrounding areas in Ward No. 07 Byatarayanapura	
Client	:	Bruhat Bengaluru Mahanagara Palike	
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore	
Contractor	:	HONNAPPA MURTHY	
Date of Testing	:	18-04-19	
Type of Mix	:	Tack coat DBM	
Sample I/D	:	1	
DETERMINATION OF RATE OF SPREAD TACK COAT			
Determination	Unit	Test No	
		1	2
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.760	0.744
Final weight of plate after application of tack Coat (c)	Kg	0.783	0.767
Weight of tack coat (d=c-b)	Kg	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.256	0.256
Average	Kg/sq.m	0.256	
Specified Limit	Kg/sq.m	0.250 Kg/sq.m	

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Consultant's Representative



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Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	HONNAPPA MURTHY
Date of Testing	:	19-04-2019
Type of Mix	:	Tack coat
Sample I/D	:	2

DETERMINATION OF RATE OF SPREAD TACK COAT

Determination	Unit	Test No	
		1	2
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.795	0.785
Final weight of plate after application of tack Coat (c)	Kg	0.818	0.808
Weight of tack Coat (d=c-b)	Kg	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.256	0.256
Average	Kg/sq.m	0.256	
Specified Limit	Kg/sq.m	0.250 Kg/sq.m	



Consultant's Representative



**BITUMEN CONTENT AND GRADATION DETERMINATION OF
BITUMINOUS CONCRETE MIX**

TEJUS
CONSULTANTS

Name of Work	:	Improvements to Roads and Drains of Sahakaranagar A,E,F,G Blocks and Surrounding areas in Ward No. 07 Byatarayanapura
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	HONNAPPA MURTHY
Date of Testing	:	19-04-2019
Type of Mix	:	BC
Sample I/D	:	BC2

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	932	911
2. Weight of Mixture after extraction, g	880	860
3. Weight of Bitumen	52	51
4. Weight of filter paper before extraction, g	2.00	2.15
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	2.10	1.85
7. Weight of Bitumen & fines	54.10	52.85
8. Bitumen content in %	5.80	5.80
9. Average Bitumen content in %	5.80	
10. Minimum Bitumen content in %	5.80	

**GRADATION FOR BC AFTER EXTRACTION
(As per MORT&H 500-18, Grading-2)**

Sample Location:	At site		Date of Sampling:	19-04-2019	
Type of material & Purpose:	BC		Date of testing:	19-04-2019	
			Oven Dry Wt.(gms):	880.0	
IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	90	90.0	10.23	89.77	79 - 100
9.50	120	210.0	23.86	76.14	71 - 95
4.75	86	296.0	33.64	66.36	53 - 71
2.360	154	450.0	51.14	48.86	42 - 58
1.180	100	550.0	62.50	37.50	34 - 48
0.600	80	630.0	71.59	28.41	26 - 38
0.300	66	696.0	79.09	20.91	18 - 28
0.150	42	738.0	83.86	16.14	12 - 20
0.075	69	807.0	91.70	8.30	4 - 10
Pan	73.0	880.0			
Total	880.0				

Consultant's Representative



**BITUMEN CONTENT AND GRADATION DETERMINATION OF
DENSE BITUMINOUS MACADAM MIX**

Name of Work	:	Improvements to Roads and Drains of Sahakaranagar A,E,F,G Blocks and Surrounding areas in Ward No. 07 Byatarayanapura
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	HONNAPPA MURTHY
Date of Testing	:	19-04-19
Type of Mix	:	DBM
Sample I/D	:	DBM-2

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	834	947
2. Weight of Mixture after extraction, g	798	910
3. Weight of Bitumen	36	37
4. Weight of filter paper before extraction, g	2.00	2.00
5. Weight of filter paper after extraction, g	4.00	4.00
6. Weight of fines, g	2.00	2.00
7. Weight of Bitumen & fines	38.00	39.00
8. Bitumen content in %	4.56	4.12
9. Average Bitumen content in %	4.34	
10. Minimum Bitumen content in %	4.50	

**GRADATION FOR DBM AFTER EXTRACTION
(As per MORT&H 500-10, Grading-2)**

Sample Location:	At site	Date of Sampling:	19-04-19
		Date of testing:	19-04-19
Type of material & Purpose:	DBM	Oven Dry Wt.(gms):	800

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
37.50	0.0	0.0	0.00	100.00	100.00
26.50	38.0	38.0	4.75	95.25	90-100
19.00	120.0	158.0	19.75	80.25	71-95
13.20	110.0	268.0	33.50	66.50	56-80
4.750	155.0	423.0	52.88	47.13	38-54
2.360	91.0	514.0	64.25	35.75	28-42
0.300	150.0	664.0	83.00	17.00	7-21
0.075	102.0	766.0	95.75	4.25	2-8
Pan	34.0				
Total	800.0				

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Consultant's Representative

